Attachment to 1/21/2010 Interview Summary
/GK/ 1/21/2010

Applicant Initiated Interview Request Form -- faxed to: 571. 273. 1220 (6 pp.)

In re the Application of

Yuichi NAKADA et al.

Application No.: 10/535,734

Filed: November 3, 2005

For: TIRE MANUFACTURING METHOD

Group Art Unit: 1791

Examiner: G. KNABLE

Docket No.: 123992

Tentative Participants:
(1) Steve Jinks (2) Examiner Knable
(3) _____ (4) _____

Confirmed Date of Interview: January 21, 2010 **Proposed Time:** 10:00 **(AM)**

Type of Interview Requested:
(1) ☒ **Telephonic** (2) ☐ **Personal** (3) ☐ **Video Conference**

Exhibit To Be Shown or Demonstrated: ☐ **YES** ☐ **NO**
If yes, provide brief description: _____

Issues To Be Discussed

Issues (Rej., Obj., etc)	Claims/ Fig. #s	Prior Art	Discussed	Agreed	Not Agreed
(1) Rejection	1-12	§112, first para.	☐	☐	☐
(2) Rejection	10	§112, first para.	☐	☐	☐
(3) Rejection	1-12	§112, second para.	☐	☐	☐
(4) Rejection	1	EP 448 407 & 2001/0002608	☐	☐	☐

☒ Continuation Sheet Attached

Brief Description of Arguments to be Presented:

The attached proposed amendments to the claims overcome the rejections of claims in (1) and (4) above. Further amendments to be discussed regarding (2) and (3) above. Note: claim 10 has been re-written in independent form based on previously submitted claims 1 and 10, with changes to address (1) above.

An interview was conducted on the above-identified application on _____

NOTE:

This form should be completed by applicant and submitted to the examiner in advance of the interview (see MPEP § 713.01).

This application will not be delayed from issue because of applicant's failure to submit a written record of this interview. Therefore, applicant is advised to file a statement of substance of this interview (37 CFR 1.133(b) as soon as possible.

_____ _____

(Applicant/Applicant's Representative Signature) (Examiner/SPE Signature)

1 (Currently Amended) A tire manufacturing method for tires in plural sizes chosen from a group of sizes specified in advance, the method comprising:

molding a green tire by assembling ~~all tire~~tire component ~~members~~ members, of the green tire specified in ~~advance~~ advance, one by one as one ~~unit~~ assembly in an assembling sequence specified in advance, wherein the members and the assembling sequence of the tire manufacturing method include at least two combinations of green tires in different sizes chosen from said group of sizes,

disposing a carcass band and two bead cores on a molding drum which has a bead lock portion, the molding drum having a diameter that can be expanded or reduced in a toroidal shape,

locking the bead cores with the bead lock portions,

repeatedly moving the molding drum between stations of a molding system having a plurality of working stations at a predetermined tact time, where the tact time is a sum of an actual working time and an idle time for each of the plurality of working stations,

expanding the diameter of the molding drum, toroidally extending the carcass band between the bead cores, rolling up a side portion of the carcass band around the bead cores outward in a radial direction,

assembling ~~tire component members, including~~ a belt member and a tread ~~member,~~member with the bead cores locked to the molding drum and molding the green tire,

reducing the diameter of the molding drum, unlocking the bead cores, and removing the green tire from the molding drum,

the method further comprising measuring, for one cycle, a waveform, which is a change in a circumferential direction of a radial distance from a central axis of rotation of the molding drum of an inflated carcass band, of the radial run-out of the carcass band inflated and deformed in the toroidal shape to adjust a disposure of the carcass band and the bead cores such that a phase f of a primary harmonic component and an amplitude Y of the waveform are cancelled out,

wherein the foregoing steps are repeated to continuously mold green tires in mixed plural ~~sizes.~~ sizes, and

wherein the tire component members comprise the carcass band, the two bead cores, the belt member and the tread member.

2. (Currently Amended) A tire manufacturing method according to claim 1, wherein, in forming said carcass band, said carcass band is assembled onto a cylindrical molding drum to form the carcass band at working stations corresponding to an inner liner member and a carcass member, respectively, and then, the carcass band is removed from the cylindrical molding drum, and

in molding said green tire, after said process for rolling up the side portion of the carcass band on the molding drum, ~~a belt member, a~~the belt member, the tread member and a sidewall member are assembled at respective corresponding working stations.

3. (Previously Presented) A tire manufacturing method according to claim 1, wherein at least one of said tire component members to be assembled at one of said working stations is comprised of one type of member element specified in advance and common to said group of sizes, and the green tire is molded by assembling the member element by an amount specified in advance for each tire component member for all the sizes in said group.

4. (Previously Presented) A tire manufacturing method according to claim 3, wherein at least one of said tire component members has a rubber ribbon made of a predetermined material continuously extruded through a die with a predetermined sectional shape as said member element, the rubber ribbon is wound on a cylindrical or a toroidal molding drum in a spiral shape and is laminated in the predetermined sectional shape, and the tire component member is assembled.

5. (Previously Presented) A tire manufacturing method according to claim 3, wherein at least one of said tire component members has a continuous sheet with a predetermined width made of a predetermined material as said member element, the continuous sheet is cut into a length specified in advance according to a size, creating narrow pieces in a number predetermined for each size that are joined to each other so that cut-off faces of the narrow pieces are aligned in a circumferential direction on the molding drum, and the tire component member is assembled.

6. (Currently Amended) A tire manufacturing method according to ~~claim 3,~~claim 4, wherein ~~a tread~~the tire component members further comprise a sidewall member and the tread member and ~~a sidewall~~the tread member and the sidewall member are included in the tire component members having ~~a rubber~~the rubber ribbon made of ~~a predetermined~~the predetermined material continuously extruded through ~~a die~~the die with ~~a predetermined~~the predetermined sectional shape as said member element, the rubber ribbon is wound on a cylindrical or a toroidal molding drum in a spiral shape and is laminated ~~as said~~to form said member element, and an inner liner member, a carcass member and a belt member are included in tire component members having a continuous sheet with a predetermined width made of a predetermined material as said member element, the continuous sheet is cut into a length specified in advance according to a size, creating narrow pieces in a number predetermined for each size that are joined to each other so that cut-off faces of the narrow pieces are aligned in a circumferential direction on the molding drum ~~as said~~to form said member element.

7. (Previously Presented) A tire manufacturing method according to claim 3, wherein, as for at least one tire component member, said member element is directly assembled onto a cylindrical or a toroidal molding drum.

8. (Previously Presented) A tire manufacturing method according to claim 3, wherein, as for at least one tire component member, said member element for a single tire is combined and then, the combined member element is assembled on a cylindrical or a toroidal molding drum.

9. (Previously Presented) A tire manufacturing method according to claim 1, further comprising:

determining a shortest idle time, which is the shortest of the idle times for each of the plurality working stations, and

changing the tact time in advance so that the shortest idle time becomes shorter.

10. (Currently Amended) A tire manufacturing method for tires in plural sizes chosen from a group of sizes specified in advance, the method comprising:

molding a green tire by assembling tire component members, of the green tire specified in advance, one by one as one assembly in an assembling sequence specified in advance,

wherein the members and the assembling sequence of the tire manufacturing method include at least two combinations of green tires in different sizes chosen from said group of sizes,

disposing a carcass band and two bead cores on a molding drum which has a bead lock portion, the molding drum having a diameter that can be expanded or reduced in a toroidal shape,

locking the bead cores with the bead lock portions,

repeatedly moving the molding drum between stations of a molding system having a plurality of working stations at a predetermined tact time, where the tact time is a sum of an actual working time and an idle time for each of the plurality of working stations,

expanding the diameter of the molding drum, toroidally extending the carcass band between the bead cores, rolling up a side portion of the carcass band around the bead cores outward in a radial direction,

assembling a belt member and a tread member with the bead cores locked to the molding drum and molding the green tire,,

reducing the diameter of the molding drum, unlocking the bead cores, and removing the green tire from the molding drum.

~~A tire manufacturing method according to claim 1, the method further comprising the steps of:~~

determining a correlation of a circumferential phase and an amount of relative displacement or angular displacement between a center of axis of the carcass band and a center of axis of the ~~band~~bead core, with an amplitude of a primary harmonic component of a radial run-out of the green tire;

constructing a molding system so that a setting position or an angle of the bead core can be controlled;

measuring the radial run-out of a first green tire for one cycle;

using a result thus measured to control the setting position or the angle of the bead core with respect to a subsequent green tire to be molded so as to cancel the primary harmonic component of the radial run-out and reduce the radial run-out of the green ~~tire.~~tire.

wherein the foregoing steps are repeated to continuously mold green tires in mixed plural sizes, and

wherein the tire component members comprise the carcass band, the two bead cores, the belt member and the tread member.

11. (Previously Presented) A tire manufacturing method according to claim 1, wherein vulcanization of the molded green tires is started sequentially at said predetermined tact time and vulcanization of the tires is finished at said predetermined tact time.

12. (Previously Presented) A tire manufacturing method according to claim 1, wherein inspection of the tire is started at said predetermined tact time.